The Indian Tradition of Colors and Colorful Rainbows

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Abstract

The perception about Rainbows and Colors has been a source of fascination for philosophers of different ages in ancient India .Here we have investigated theories of color phenomena from date back thousands of years (505 CE) in book of VARAHMIHIR named BRIHATSAMHITA to age of Indian school on VAISHESHIKA by KANADA .Our investigation also includes text of 2nd century CE NYAYA SUTRAS by AKSAPADA GAUTAMA and hence we provide introduction to scientific quest of Indian philosophers about these phenomena in brief.

INTRODUCTION:

Rainbows and their colors are vibrant optical paradigm in the sky. Leaving behind the modern explanations we investigated verses of ancient Indian texts of Sanskrit and found Kanada ,Gautama, Varahmihir and many more philosophers contributed their ideas on the same . Kanada in Vaisheshika Sutra pointed color as Rupa and the same by Gautama in Nyaya Sutra .Varahmihir in his book not only explained the phenomena but also used it as a astrological tool to predict future.

This way paper presents the Indian traditional philosophy of Rainbows and colors in brief.

COLOR OF VAISHESHIKA:

This school of "individual characteristics" is supposed to have been founded by Kanada, the son of Uluka. Kanada's Vaisheshika Sutras describe a system of physics and metaphysics. Its physics is an atomic theory of nature, where the atoms are distinct from the soul, of which they are the instruments. Each element has individual characteristics, which distinguish it from the other non-atomic substances (dravyas): time, space, soul, and mind. The atoms are considered to be eternal. There are six fundamental categories (padartha) associated with reality: Substance (dravya), quality (guna), motion (karman), universal (samanya), particularity (visesa), and inherence (samavaya). Each of these categories is further subdivided, into seventeen qualities (guna), which are listed in Vaisheshika Sutra one of them is color (rupa). Kanada presents his color theory in a mysterious form:

रूपाणां रूपम ।। ।१।१।२८ ।।

Translation [1]: Color is the joint effect of many colors.

अनेक द्रव्यसमवायात् रूपविशेपाच्च रूपोपलब्धि:।। ४।१।८।।

Translation [1] :Perception of color arises from its combination with a compound of substance more than two and form some special characteristic of color.

पृथिव्यादिरूपरसगन्ध स्पर्शा द्रव्यानित्यत्वादनित्याश्च ।।७।१।२।।

Translation [1] :The Color, Taste, Smell and Touch of Earth, Water, Fire and Air are also non eternal.

From above statements of Kanada we can say he was aware of Color theory and also had the knowledge of obtaining another color by mixing colors.

COLOR OF NYAYA:

This is one of the six systems of Indian philosophy. These systems are called Darsanas, in Sanskrit. The Nyaya system is a

philosophy of logic. Though it was first formally written down by Gautama in the third century BC, essentially, it is a treatise expounding the argument from design. The word Nyaya literally means that by which the mind is led to a conclusion. We are led to conclusions by reason and by argument. The popular usage of the word Nyaya means "right" and so Nyaya as a system has come to mean the science of correct reasoning. Gautama's color enigma as follows:

गंधरसरूपस्पर्शशब्दा: "पृथिव्यादिगुणा:" तदार्था:।। १।१।१४ ।।

Translation [2]: Smell, taste, color, touch and sound are objects of' the senses and qualities of the earth, etc.

अनेक द्रव्यसमवायात् रूपविशेषाच्च रूपोपलब्धि: ।। ३।१।३६।

Translation [2]: A color is perceived only when it abides in many things intimately and possesses obviousness.

In this way we can see Gautama's concept of colors.

RAINBOWS OF BRIHATSAMHITA:

In the book BRIHATSAMHITA Varahmihir , an Indian astronomer, mathematician, and astrologer explained colorful band of rainbow as dispersion of sun light through moist air in atmosphere. In Chapter -35 (INDRAYOUDH LAKSHANADHAYAH) [3], He presented the theory as:

सूर्यस्य विविधवर्णा: पवनेन विघट्टिता: करा: साभ्रे ।

वियति धनु:संस्थाना ये दृश्यन्ते तदिन्द्रधनु: ।।१।।

Translation [4]: The multicolored ray of Sun, being dispersed in cloudy sky , are seen in the form of bow , which is called the Rainbow.

He not only explained rainbow and its types as primary & secondary but exemplified the divination in best way . He draws up meticulous list of signs which indicate the arrival of rain , flood, draught, Storms and earthquake and many other forecasts based on rainbow. [5]

CONCLUSION:

We have shown that the physical concepts underlying VAISHESHIKA, NYAYA and BRIHATSAMHITA represent a sophisticated materialist framework for the laws of nature. This Physics was based on general observations on the various physical processes.

In our view Indian philosophy shows that in the period of the early Sanskrit texts, that are definitely prior to 3rd or 4th century BC, the facts about colors and colorful Rainbows were known and, therefore, it is of great interest to the historian of Physics.

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